

FIG. 1

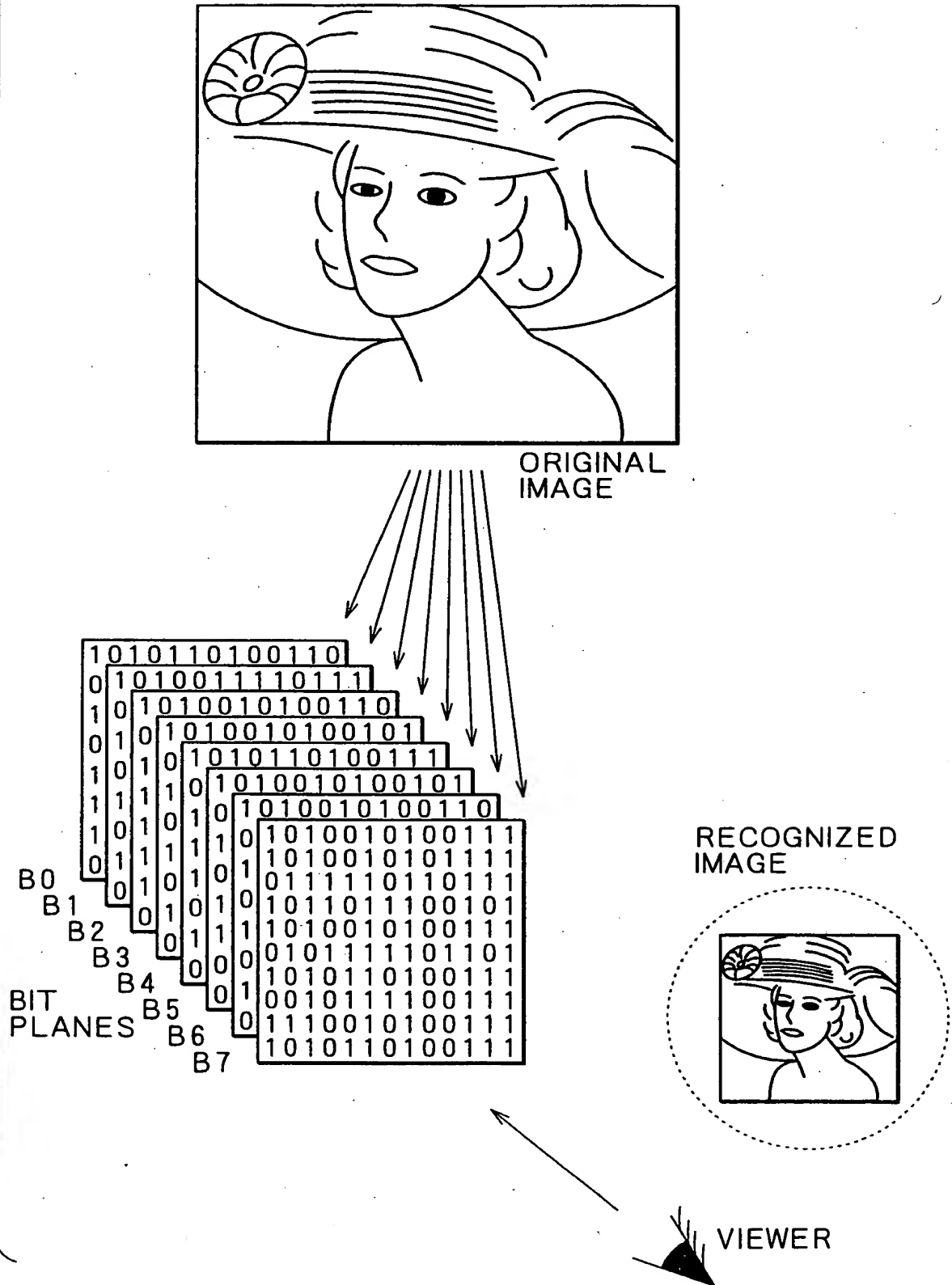


FIG. 2

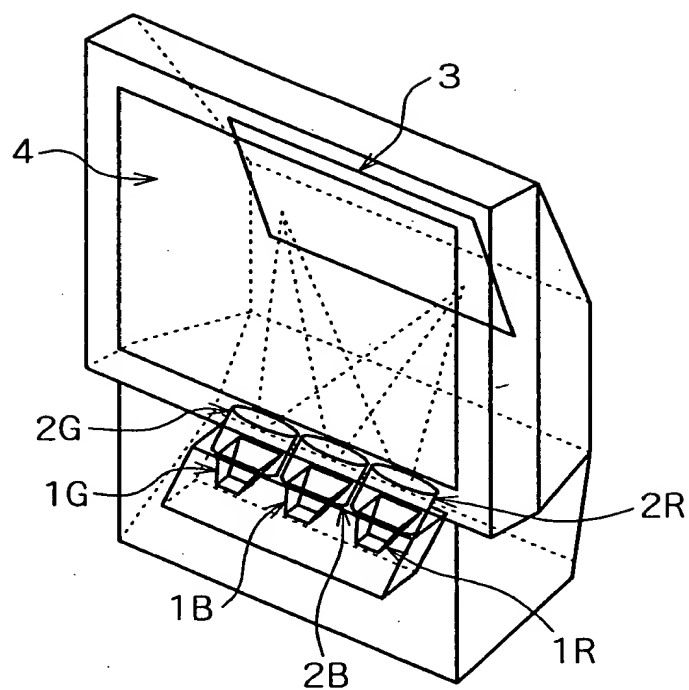


FIG. 3

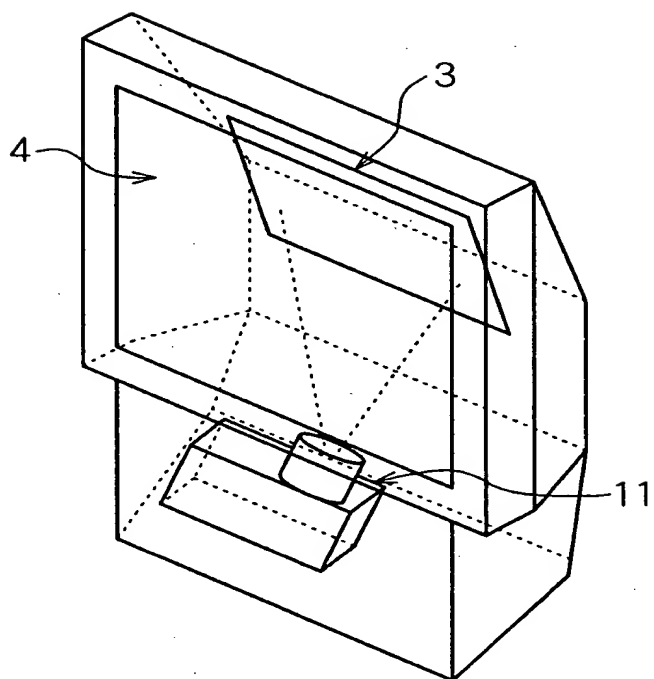


FIG. 4

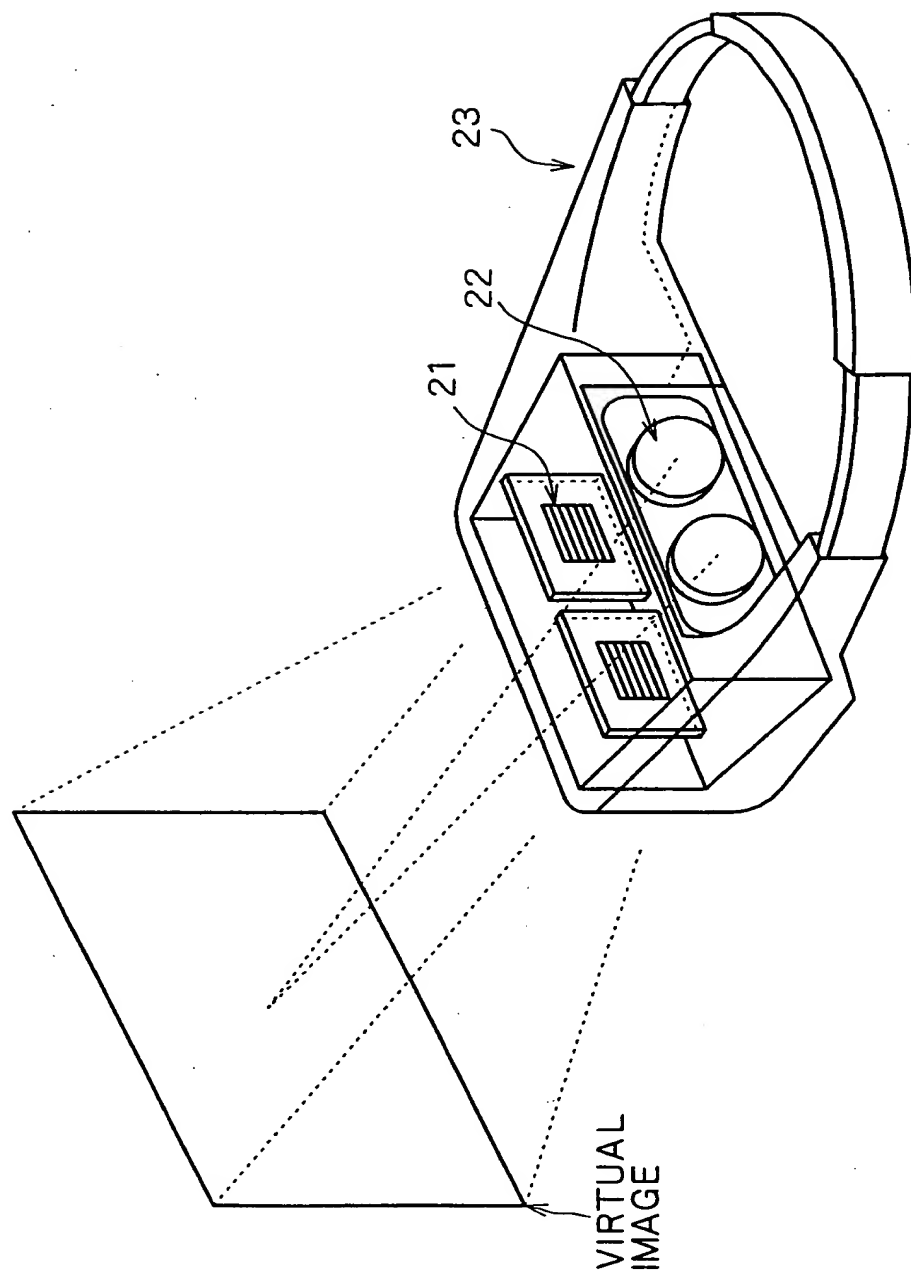


FIG. 5

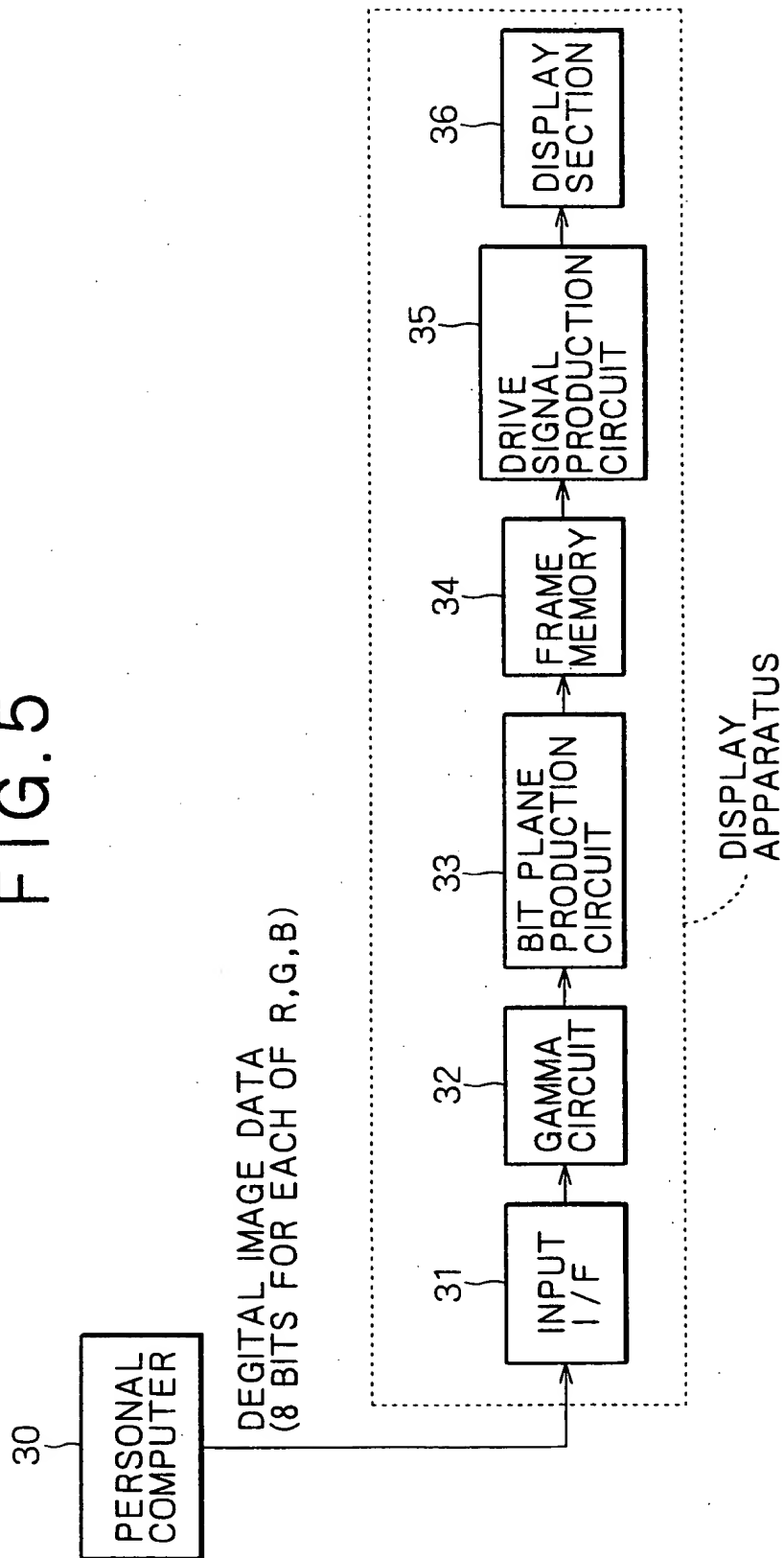
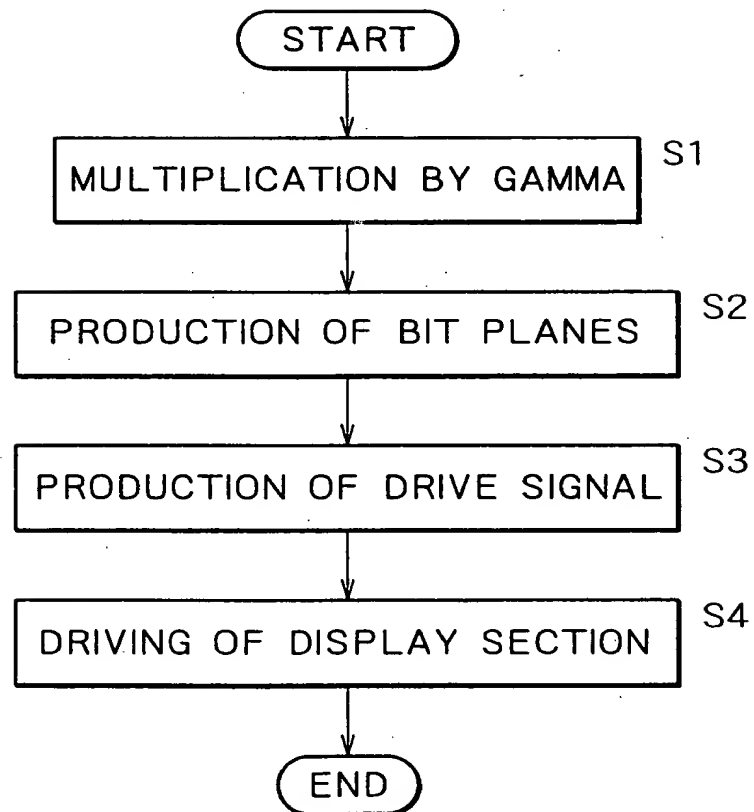
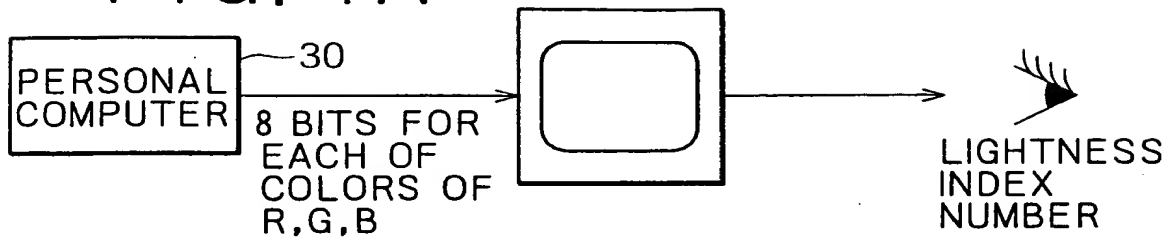


FIG. 6



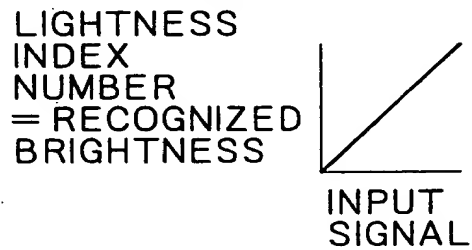
# FIG. 7A



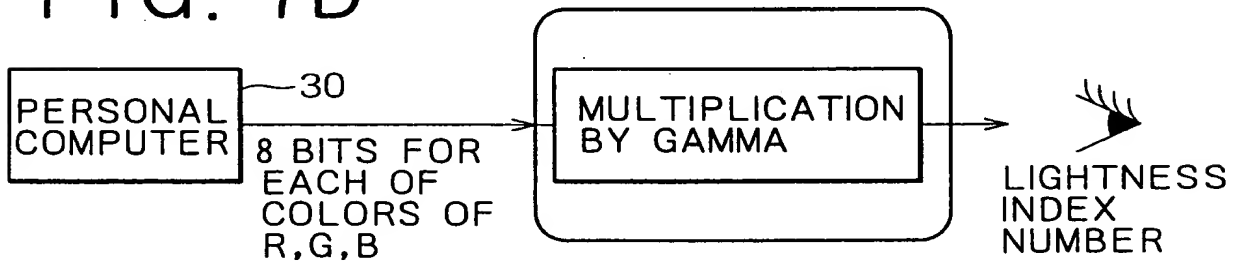
# FIG. 7B



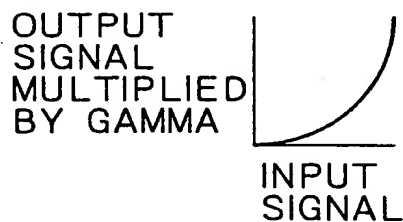
# FIG. 7C



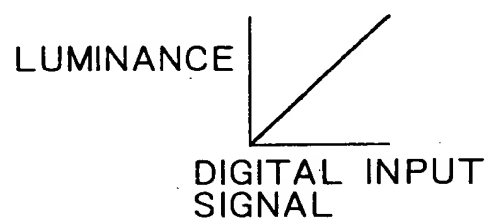
# FIG. 7D



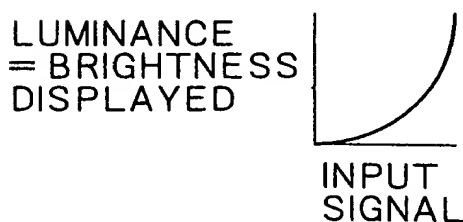
# FIG. 7F



# FIG. 7E



# FIG. 7G



# FIG. 7H

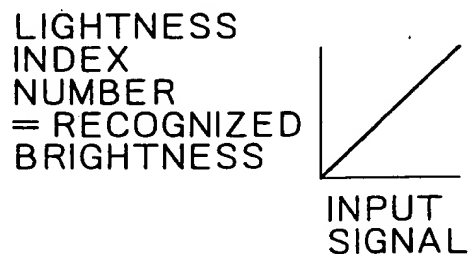


FIG. 8A

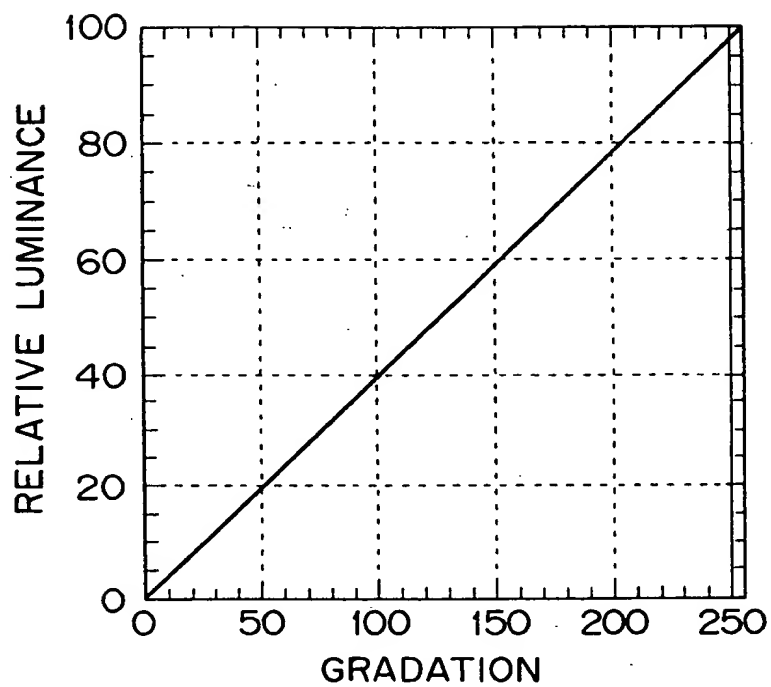
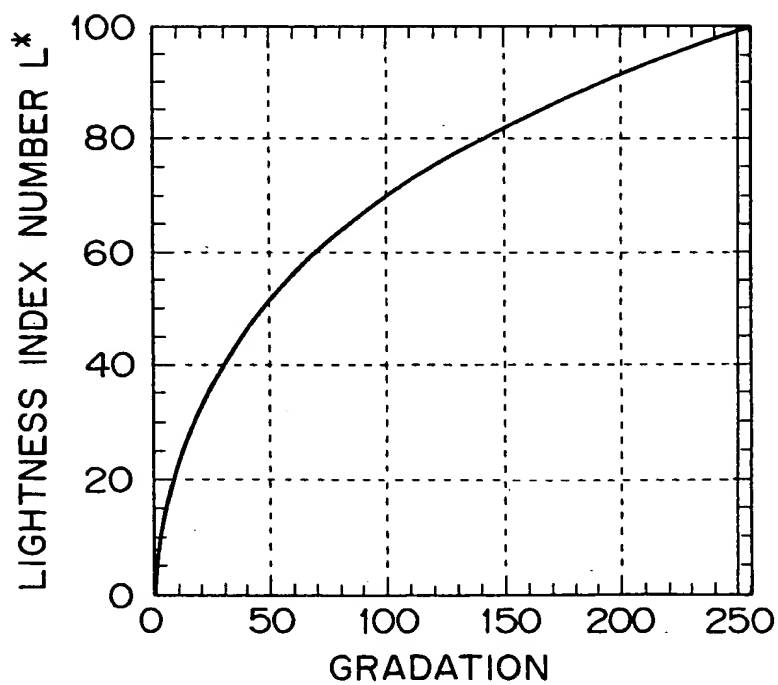
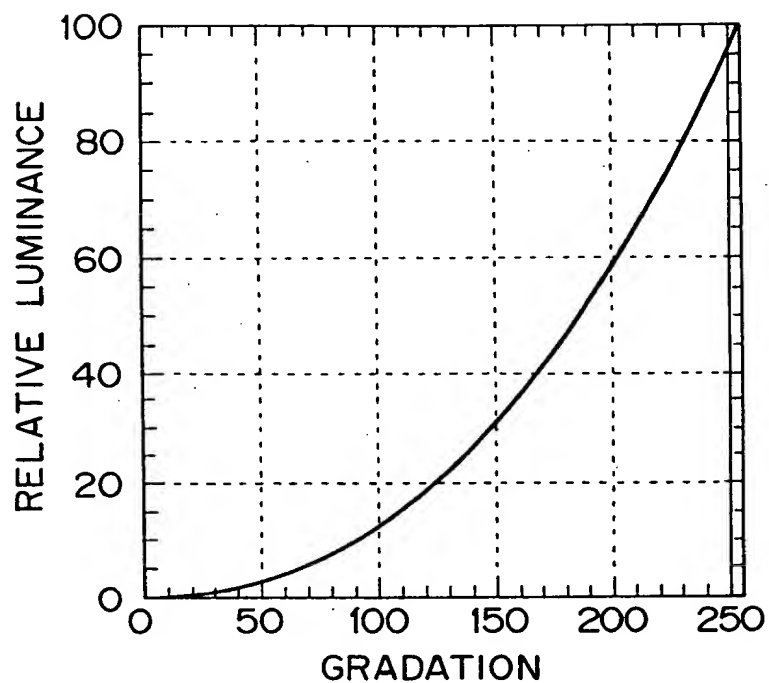


FIG. 8B

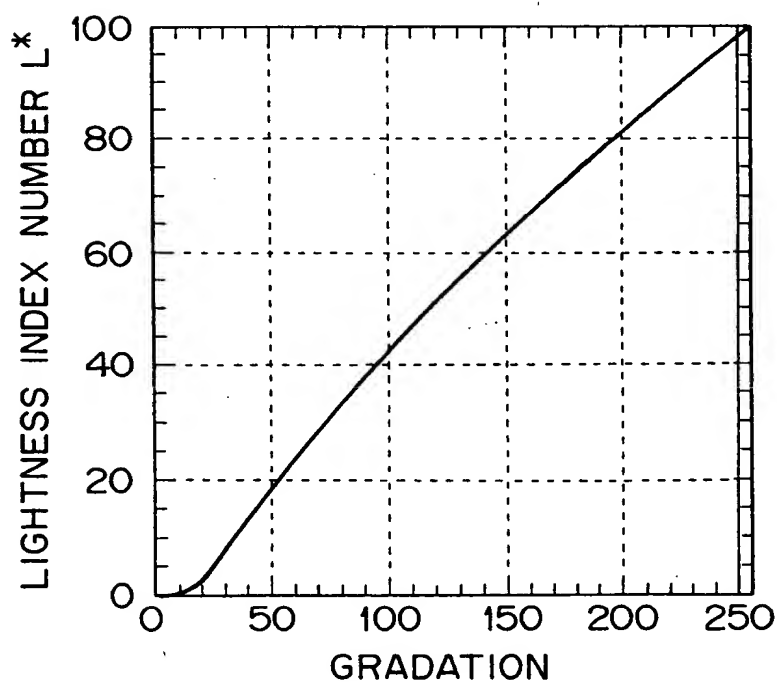




# FIG. 9A



# FIG. 9B



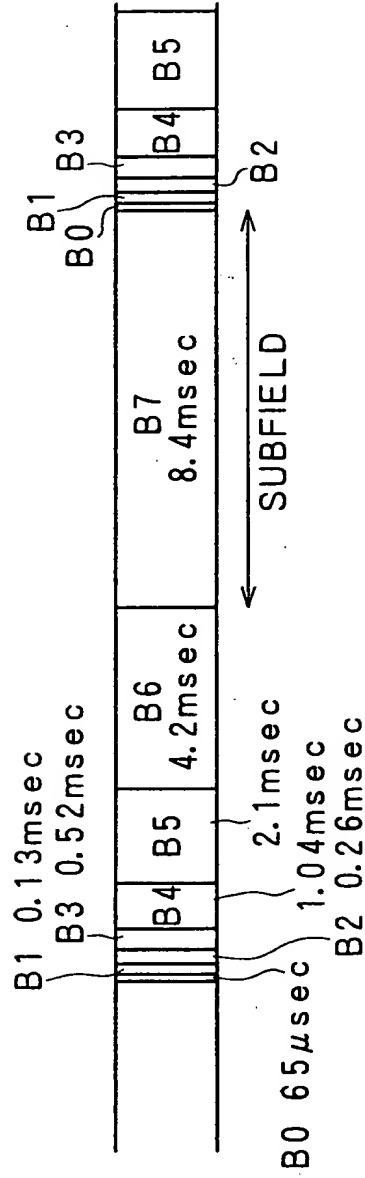


FIG. 10A

SUBFIELD

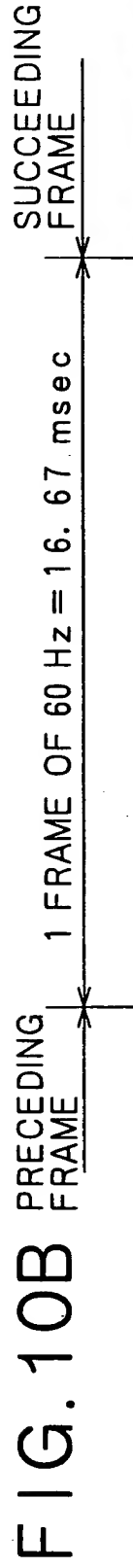


FIG. 10B

LUMINANCE OF LIGHT SOURCE

LUMINANCE OF LIGHT SOURCE = FIXED

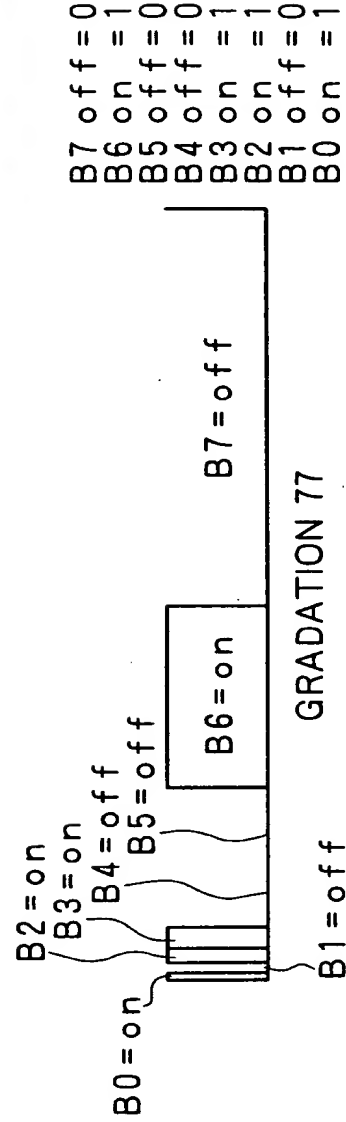
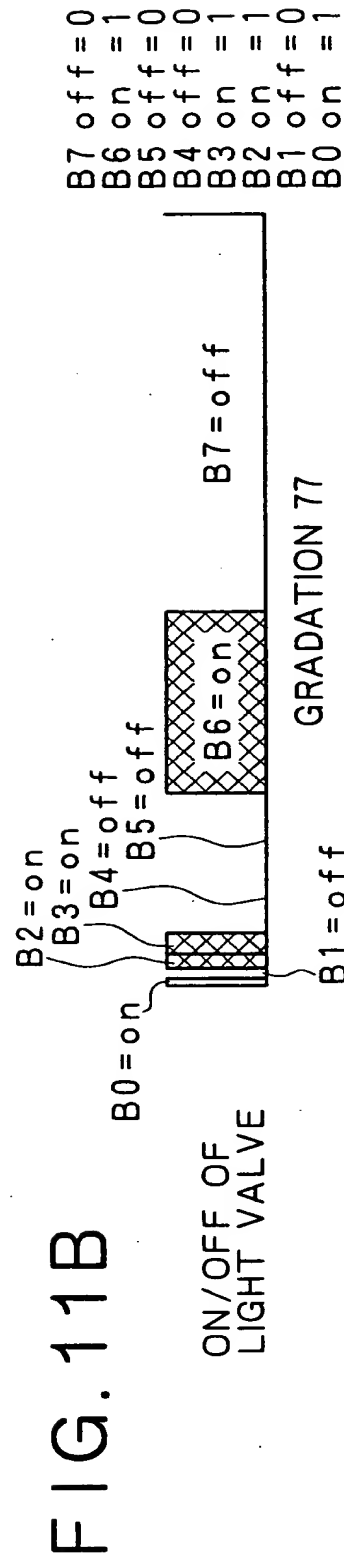
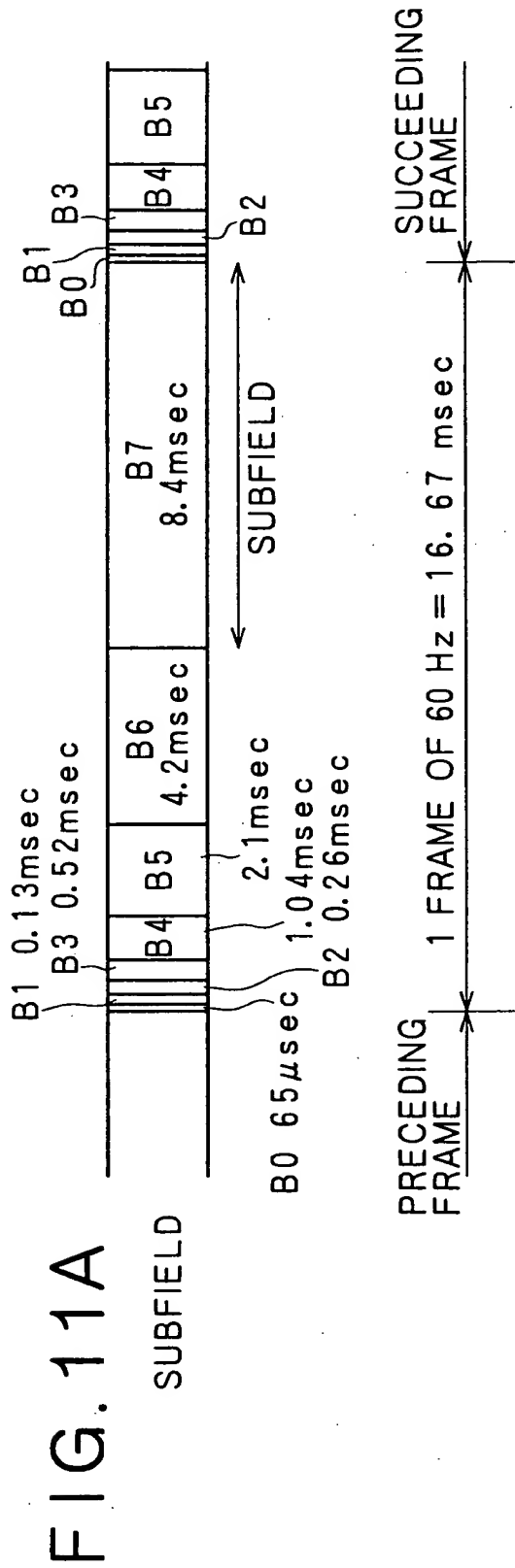


FIG. 10C

ON/OFF OF LIGHT VALVE

GRADATION 77

B7 off = 0  
B6 on = 1  
B5 off = 0  
B4 off = 0  
B3 on = 1  
B2 on = 1  
B1 off = 0  
B0 on = 1



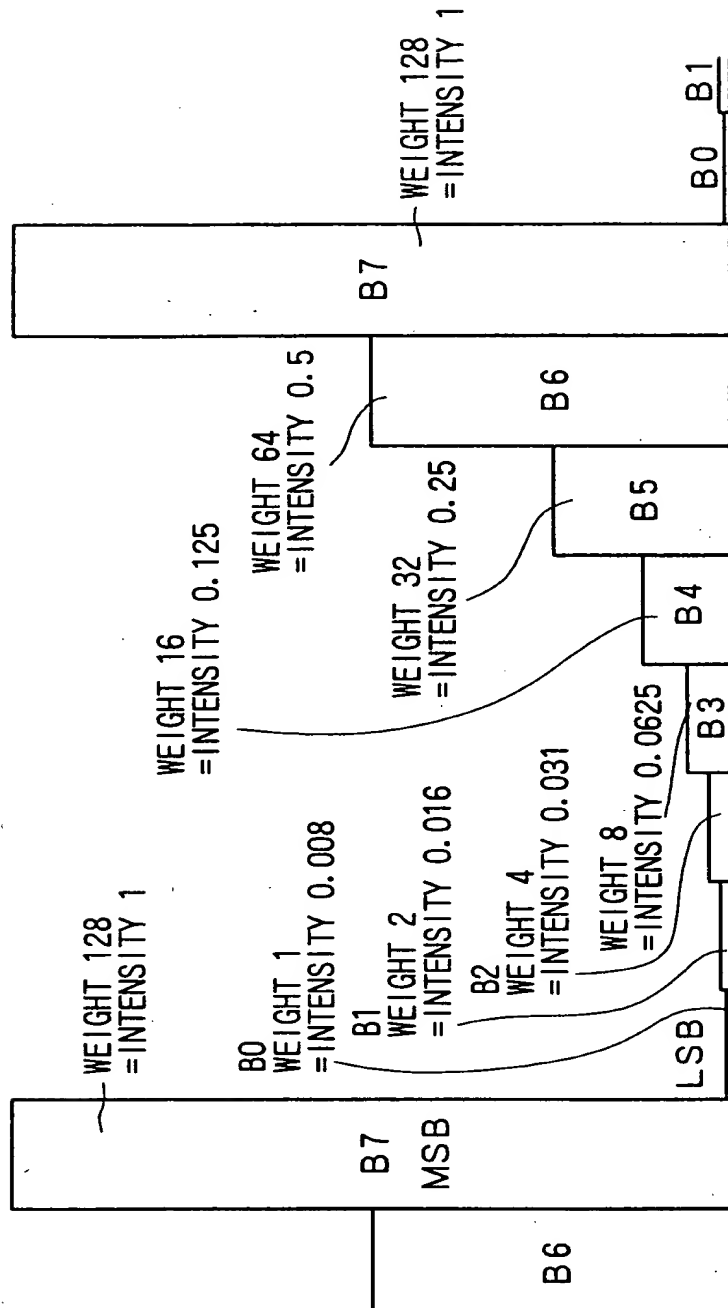


FIG. 12A

LUMINANCE OF  
LIGHT SOURCE

SUBFIELD

$16.67 / 8 = 2.1 \text{ msec}$

1 FRAME OF 60 Hz = 16.67 msec

GRADATION

B7 off = 0  
B6 on = 1  
B5 off = 0  
B4 off = 0  
B3 on = 1  
B2 on = 1  
B1 off = 0  
B0 on = 1

FIG. 12B

ON/OFF OF LIGHT  
SOURCE/LIGHT VALVE

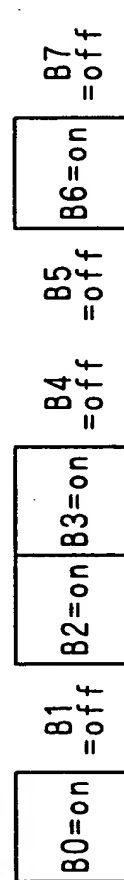
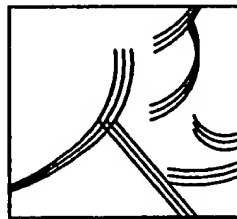


FIG. 13A

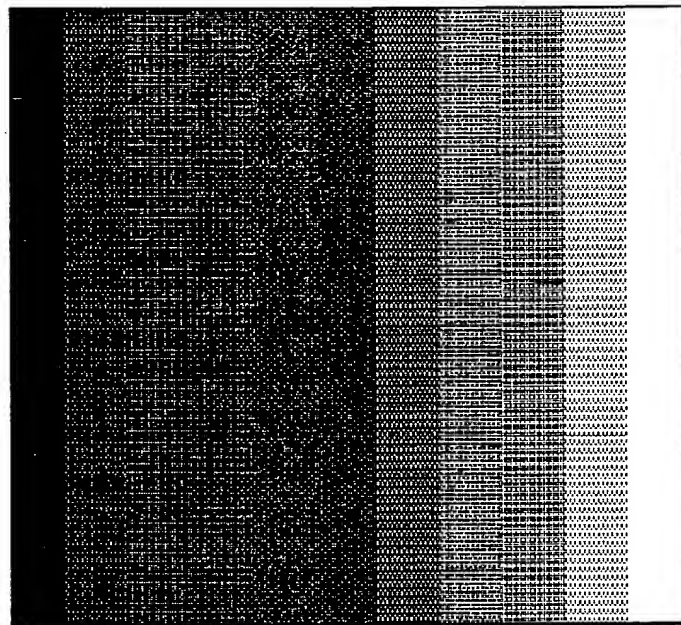


FIG. 13B



ENLARGED

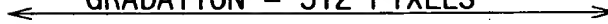
# FIG. 14A



GRADATION 0

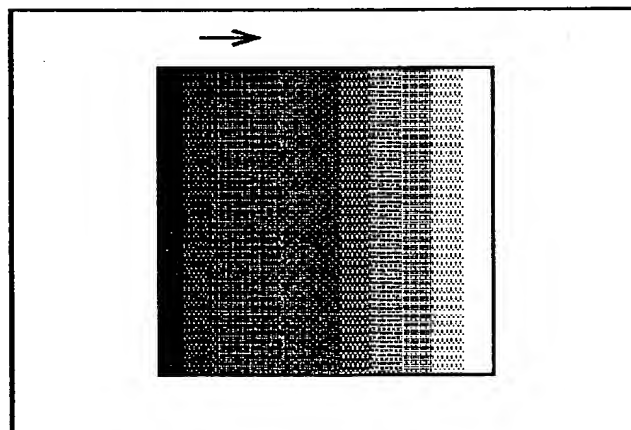
GRADATION 255

256 GRADATIONS  $\times$  2 PIXELS/  
GRADATION = 512 PIXELS



# FIG. 14B

10 PIXELS/FRAME = 600 PIXELS/  
1 SECOND  
WHEN 1 FRAME = 60 Hz



640/480 DISPLAY HORIZONTALLY 640 PIXELS  $\rightarrow$  1.1 SECONDS  
 800/600 DISPLAY HORIZONTALLY 800 PIXELS  $\rightarrow$  1.3 SECONDS  
 1024/768 DISPLAY HORIZONTALLY 1024 PIXELS  $\rightarrow$  1.7 SECONDS  
 1280/1024 DISPLAY HORIZONTALLY 1280 PIXELS  $\rightarrow$  2.1 SECONDS  
 1600/1200 DISPLAY HORIZONTALLY 1600 PIXELS  $\rightarrow$  2.6 SECONDS

# FIG. 15

(A) (B) (C) (D)

8-BIT LINEAR	$\gamma 2.2$	8-BIT INTEGER	B0	B1	B2	B3	B4	B5	B6	B7
0	0.0	0	0	0	0	0	0	0	0	0
1	0.0	0	0	0	0	0	0	0	0	0
2	0.0	0	0	0	0	0	0	0	0	0
3	0.0	0	0	0	0	0	0	0	0	0
4	0.0	0	0	0	0	0	0	0	0	0
5	0.0	0	0	0	0	0	0	0	0	0
6	0.1	0	0	0	0	0	0	0	0	0
7	0.1	0	0	0	0	0	0	0	0	0
8	0.1	0	0	0	0	0	0	0	0	0
9	0.2	0	0	0	0	0	0	0	0	0
10	0.2	0	0	0	0	0	0	0	0	0
11	0.3	0	0	0	0	0	0	0	0	0
12	0.3	0	0	0	0	0	0	0	0	0
13	0.4	0	0	0	0	0	0	0	0	0
14	0.4	0	0	0	0	0	0	0	0	0
15	0.5	1	1	0	0	0	0	0	0	0
16	0.6	1	1	0	0	0	0	0	0	0
17	0.7	1	1	0	0	0	0	0	0	0
18	0.7	1	1	0	0	0	0	0	0	0
19	0.8	1	1	0	0	0	0	0	0	0
20	0.9	1	1	0	0	0	0	0	0	0
21	1.0	1	1	0	0	0	0	0	0	0
22	1.2	1	1	0	0	0	0	0	0	0
23	1.3	1	1	0	0	0	0	0	0	0
24	1.4	1	1	0	0	0	0	0	0	0
25	1.5	2	0	1	0	0	0	0	0	0
26	1.7	2	0	1	0	0	0	0	0	0
27	1.8	2	0	1	0	0	0	0	0	0
28	2.0	2	0	1	0	0	0	0	0	0
29	2.1	2	0	1	0	0	0	0	0	0
30	2.3	2	0	1	0	0	0	0	0	0

(OMITTED)

241	225.2	225	1	0	0	0	0	1	1	1
242	227.3	227	1	1	0	0	0	1	1	1
243	229.3	229	1	0	1	0	0	1	1	1
244	231.4	231	1	1	1	0	0	1	1	1
245	233.5	234	0	1	0	1	0	1	1	1
246	235.6	236	0	0	1	1	0	1	1	1
247	237.7	238	0	1	1	1	0	1	1	1
248	239.9	240	0	0	0	0	1	1	1	1
249	242.0	242	0	1	0	0	1	1	1	1
250	244.1	244	0	0	1	0	1	1	1	1
251	246.3	246	0	1	1	0	1	1	1	1
252	248.4	248	0	0	0	1	1	1	1	1
253	250.6	251	1	1	0	1	1	1	1	1
254	252.8	253	1	0	1	1	1	1	1	1
255	255.0	255	1	1	1	1	1	1	1	1

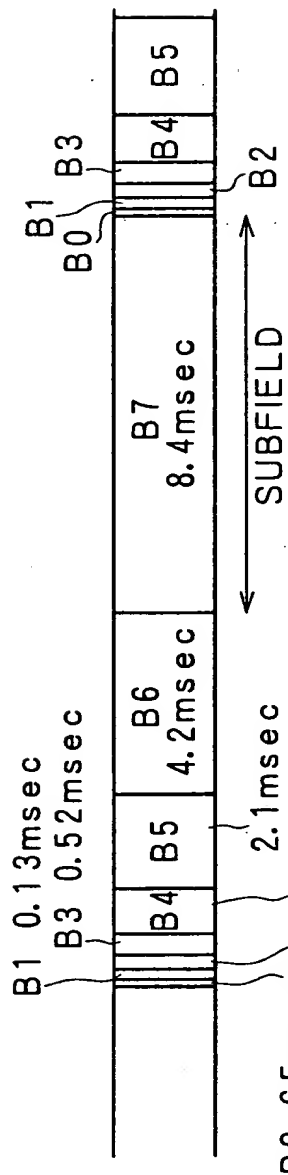


FIG. 16A  
SUBFIELD

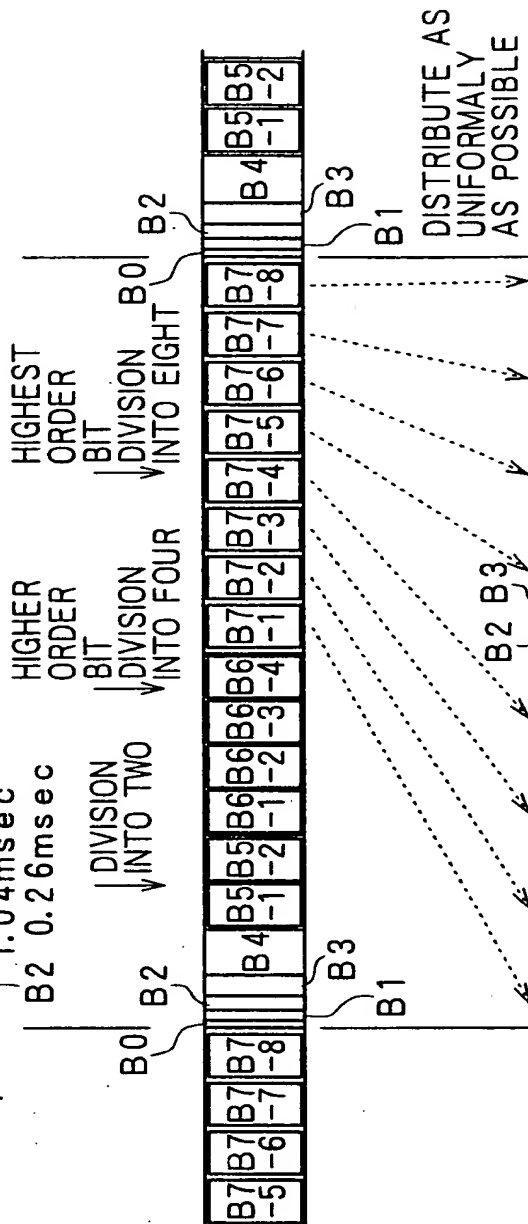


FIG. 16B  
DIVISION

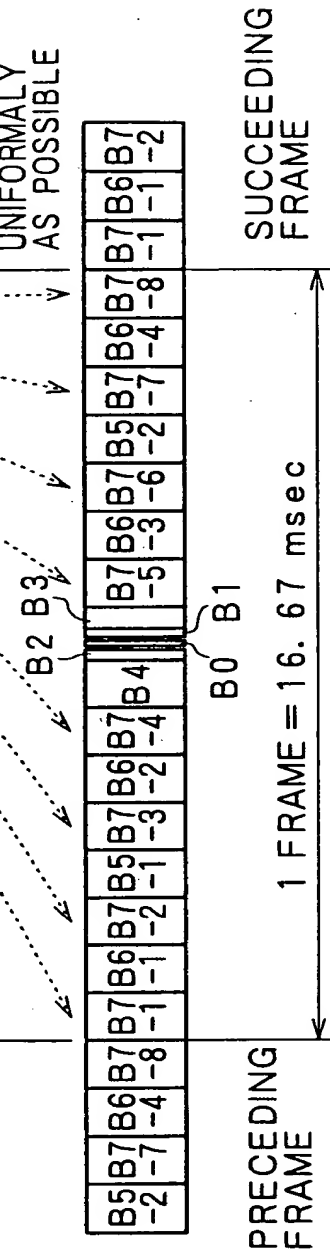
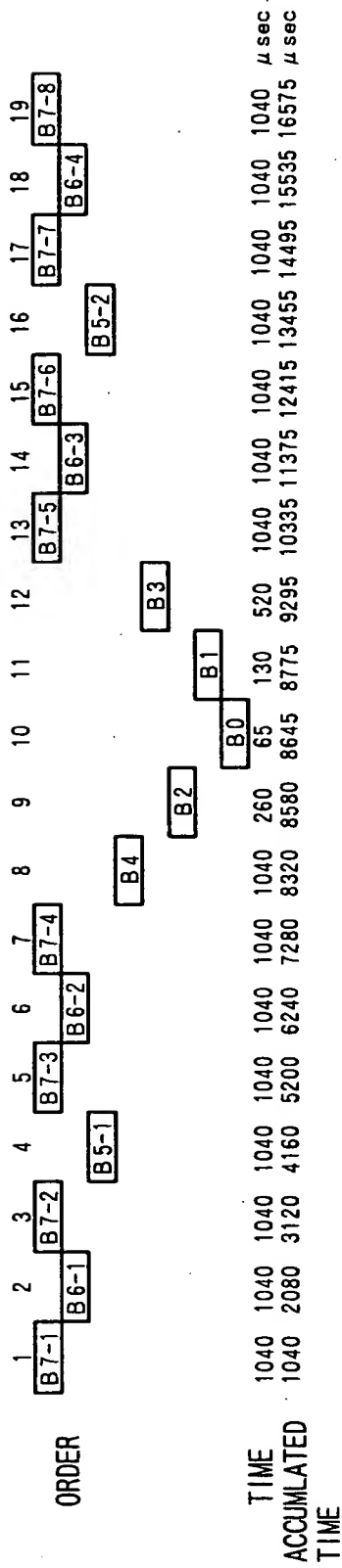


FIG. 16C



# FIG. 17



$\mu$  sec

FIG. 19A

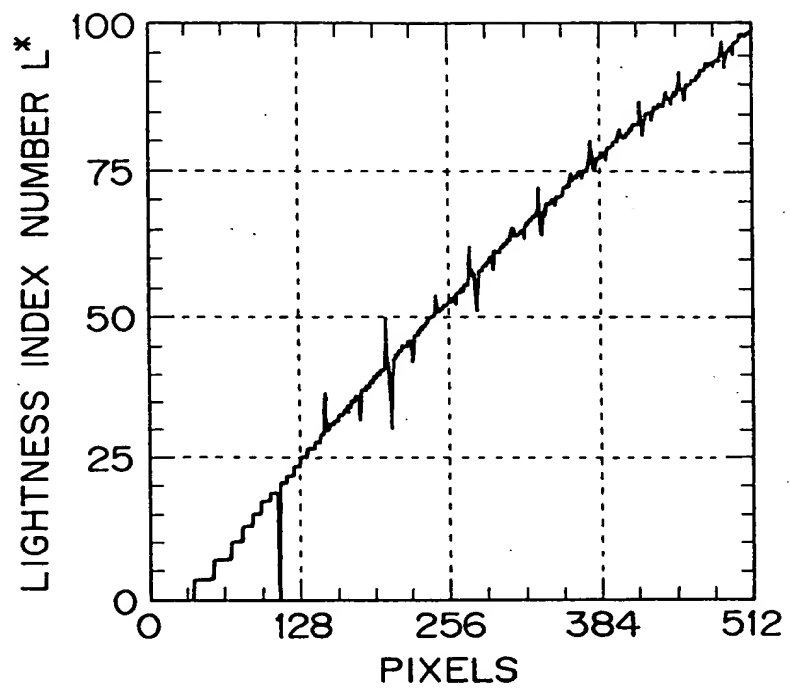
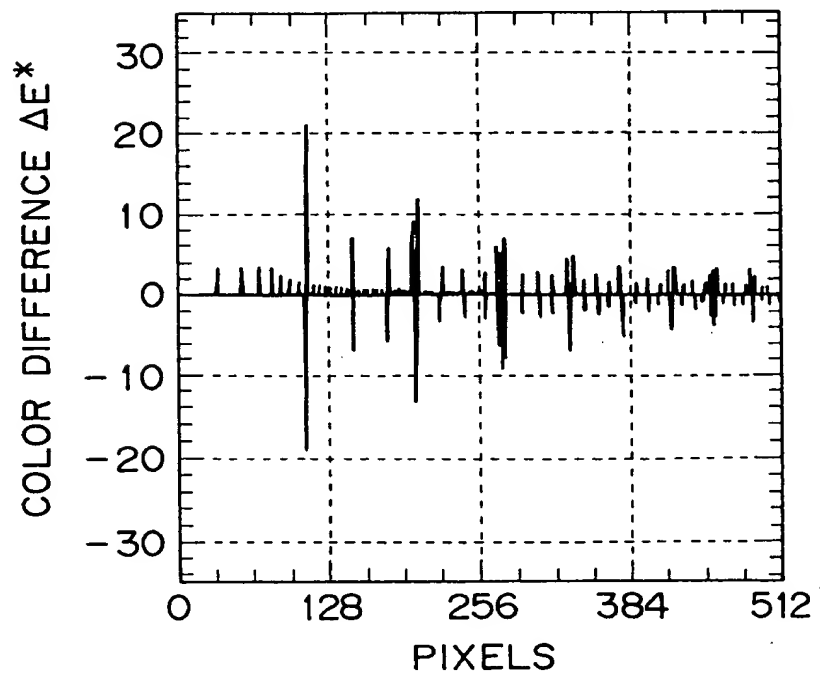


FIG. 19B



# FIG. 20A

DIVISION		WEIGHT		DIVISION	$\mu$ sec
BIT PLANE	WEIGHT				
MSB	128	8	16	8320	1040
B7	64	4	16	4160	1040
B6	32	2	16	2080	1040
B5	16	1	16	1040	1040
B4	8	1	8	520	520
B3	4	1	4	260	260
B2	2	1	2	130	130
B1	1	1	1	65	65
Blank				92	16667
TOTAL				19	
LSB					

# FIG. 20B

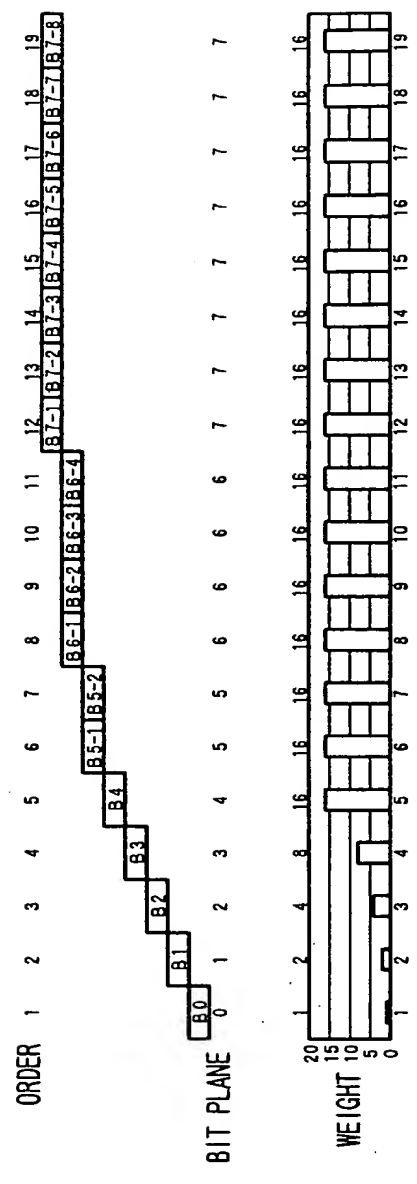


FIG. 21A

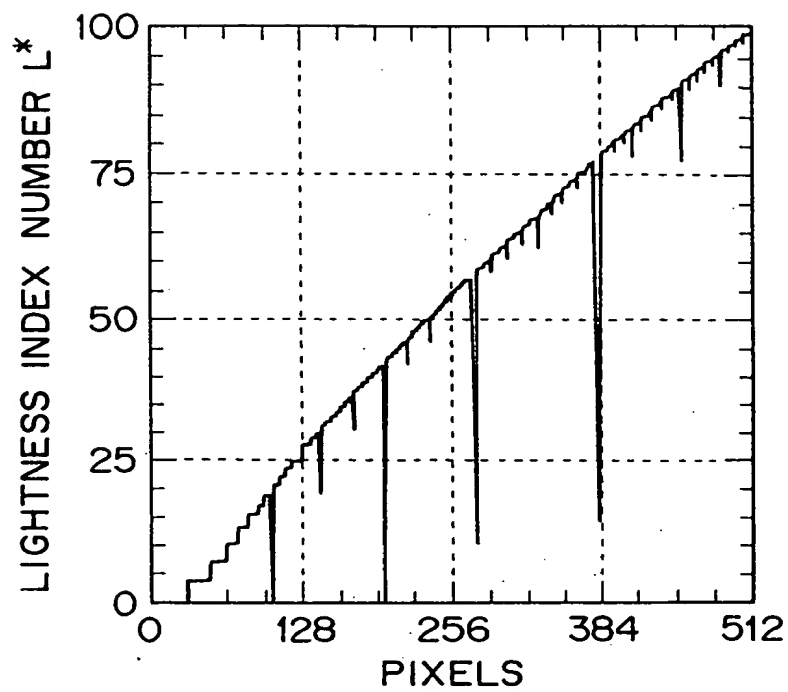
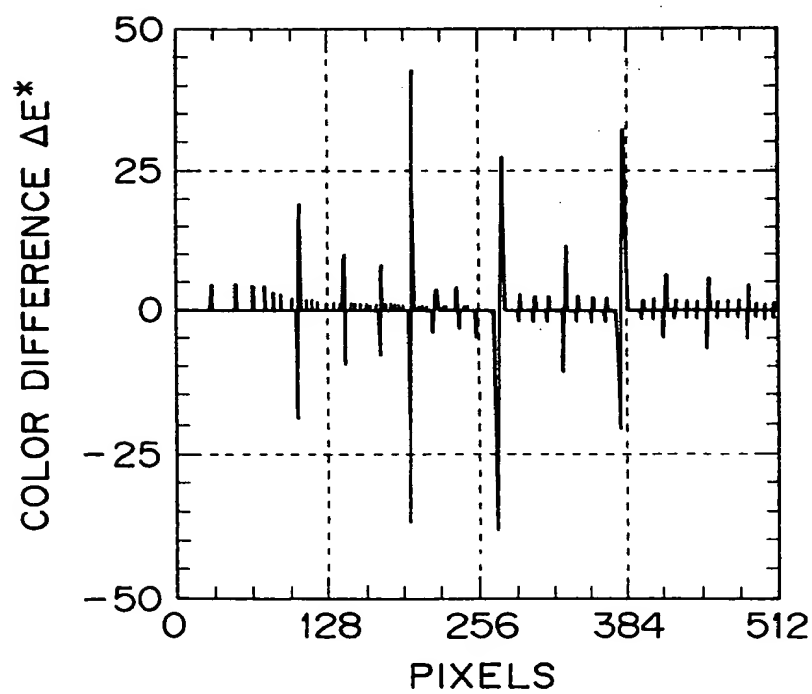


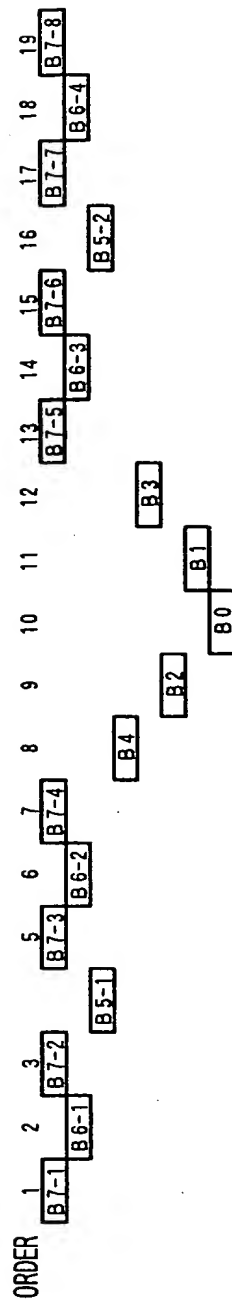
FIG. 21B



# FIG. 22A

BIT PLANE		DIVISION NUMBER	WEIGHT AFTER DIVISION
MSB	B7	8	128
	B6	4	64
	B5	2	32
	B4	1	16
	B3	1	8
	B2	1	4
	B1	1	2
LSB	B0	1	1
Blank			
		TOTAL	19

# FIG. 22B



# FIG. 23A

# FIG. 23B

SUBFIELD NUMBER OF COLUMNS OF HORIZONTAL PIXELS	B7-1 B6-1 B7-2 B5-1 B7-3 B6-2 B7-4 B4 B2 B0 B1 B3 B7-5 B6-3 B7-6 B5-2 B7-7 B6-4 B7-8												NORMALIZED LIGHT AMOUNT ×100	LIGHTNESS Lab	COLOR DIFFERENCE ΔE																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
	0	0	0	0	0	0	0	0	0	0	0	0				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

FIG. 24A

FIG. 24B

MOVEMENT PIXEL NUMBER	SUBFIELD B7-1 B6-1 B7-2 B5-1 B7-3 B6-2 B7-4 B4 B3 B2 B0 B1 B3 B7-5 B6-3 B7-6 B5-2 B7-7 B6-4 B7-8	NUMBER OF COLUMNS OF HORIZONTAL PIXELS	LIGHTNESS										NORMALIZED LIGHT AMOUNT		LIGHTNESS		COLOR DIFFERENCE	
			x100										Lab		ΔE			
1	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0000	0.0	0.00	0.00	0.00
2	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0000	0.0	0.00	0.00	0.00
3	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0000	0.0	0.00	0.00	0.00
4	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0000	0.0	0.00	0.00	0.00
5	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0000	0.0	0.00	0.00	0.00
6	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0000	0.0	0.00	0.00	0.00
7	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0000	0.0	0.00	0.00	0.00
8	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0000	0.0	0.00	0.00	0.00
9	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0000	0.0	0.00	0.00	0.00
10	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0000	0.0	0.00	0.00	0.00
(OMMITTED)																		
270	0	0	0	0	0	0	0	0	0	0	0	0	62.0	0.2431	24.31	56.40	1.19	
271	0	0	0	0	0	0	0	0	0	0	0	0	60.0	0.2353	23.53	55.61	-0.79	
272	0	0	0	0	0	0	0	0	0	0	0	0	61.0	0.2392	23.92	56.01	0.40	
273	0	0	0	0	0	0	0	0	0	0	0	0	61.0	0.2392	23.92	56.01	0.00	
274	0	1	0	0	0	0	0	0	0	0	0	0	76.0	0.2980	29.80	61.48	5.48	
(OMMITTED)																		
512	1	1	1	1	0	1	0	1	1	1	1	1	249.0	0.9765	97.65	99.08	0.15	
513	1	1	1	1	0	1	0	1	1	1	1	1	251.0	0.9843	98.43	99.39	0.31	
514	1	1	1	1	1	1	1	1	1	1	1	1	223.0	0.8742	87.45	94.93	-4.46	
515	1	1	1	1	1	1	0	1	1	1	1	1	189.0	0.7412	74.12	88.98	-5.95	
516	1	1	1	1	1	1	0	1	1	1	1	1	157.0	0.6157	61.57	82.68	-6.29	
517	1	1	1	1	1	1	1	1	1	1	1	1	127.0	0.4980	49.80	75.95	-6.73	
518	1	1	1	1	1	1	1	1	1	1	1	1	122.0	0.4784	47.84	74.73	-1.22	
519	1	1	1	1	1	1	1	1	1	1	1	1	112.0	0.4392	43.92	72.18	-2.55	
520	1	1	1	1	1	1	1	1	1	1	1	1	80.0	0.3137	31.37	62.82	-9.36	
521	1	1	1	1	1	1	1	1	1	1	1	1	48.0	0.1882	18.82	50.48	-12.34	
522	1	1	1	1	1	1	1	1	1	1	1	1	16.0	0.0627	6.27	30.09	-20.39	



FIG. 25A

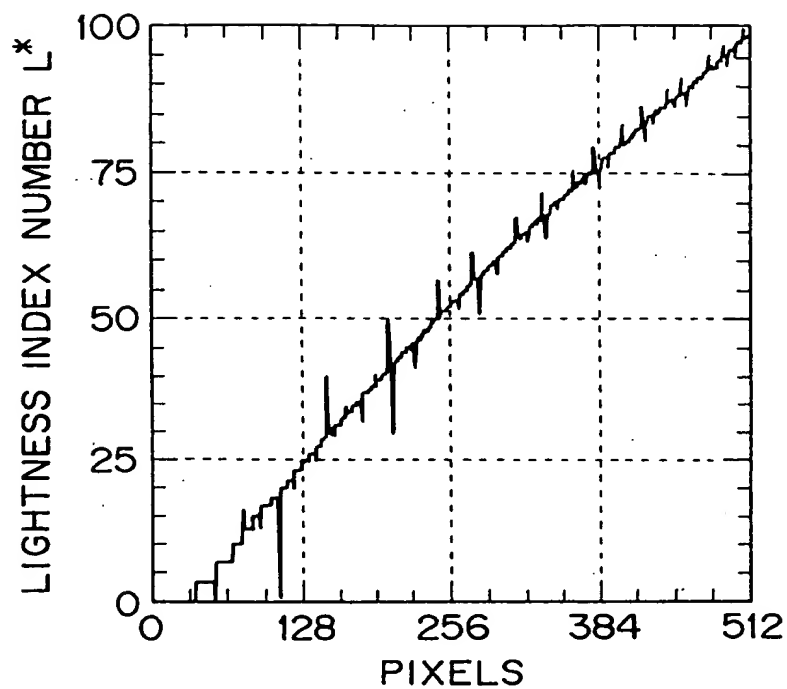


FIG. 25B

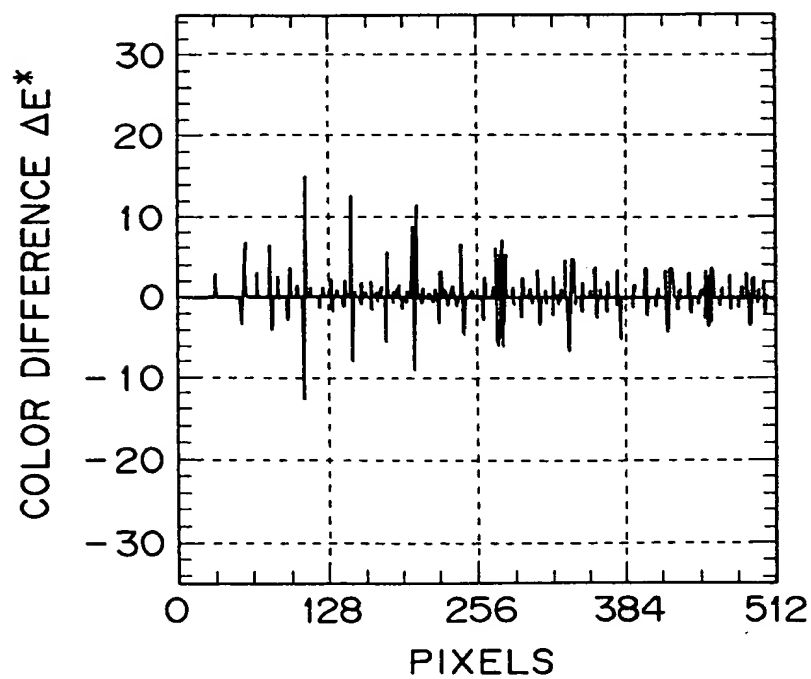




FIG. 27A

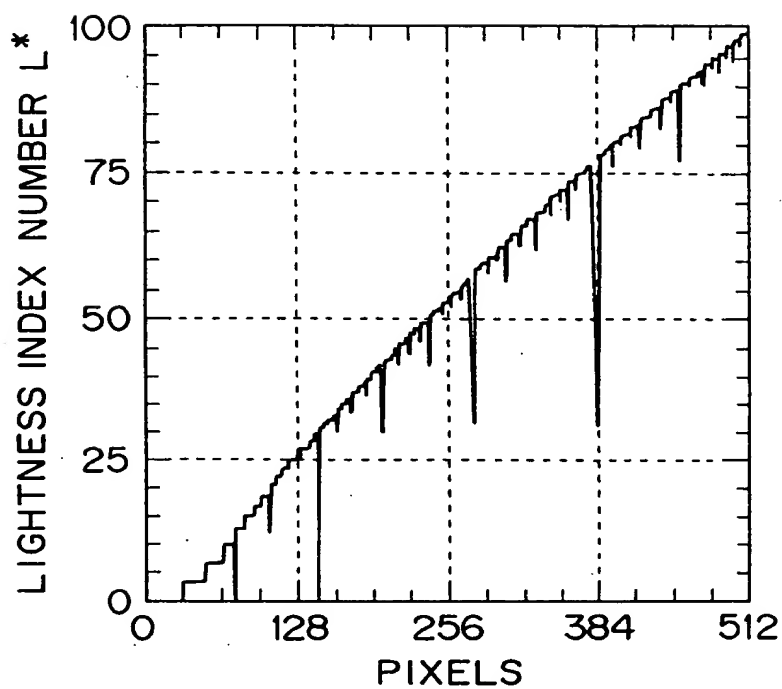


FIG. 27B

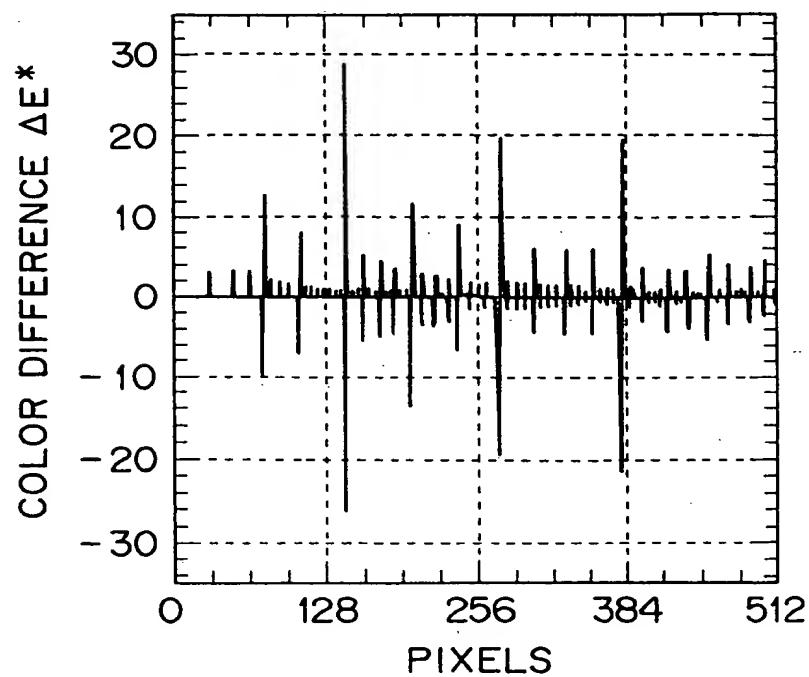


FIG. 28A

FIG. 28B

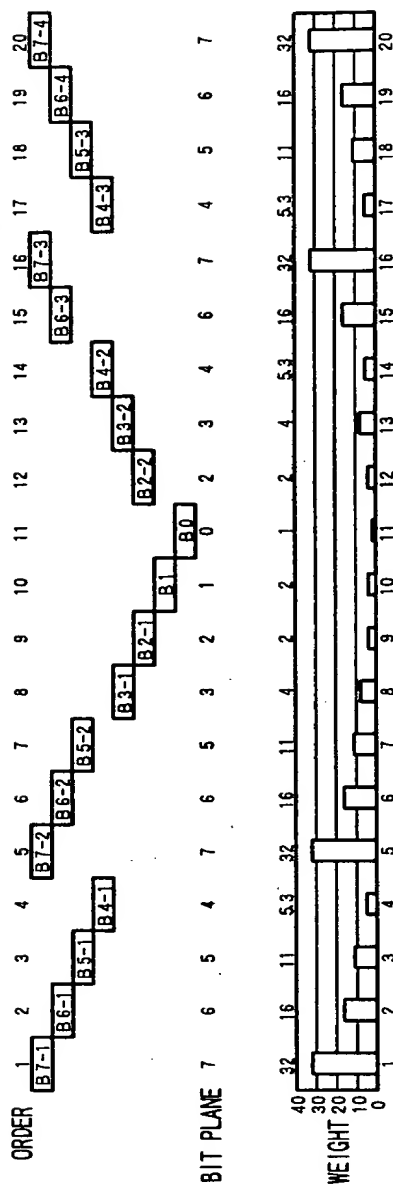


FIG. 29A

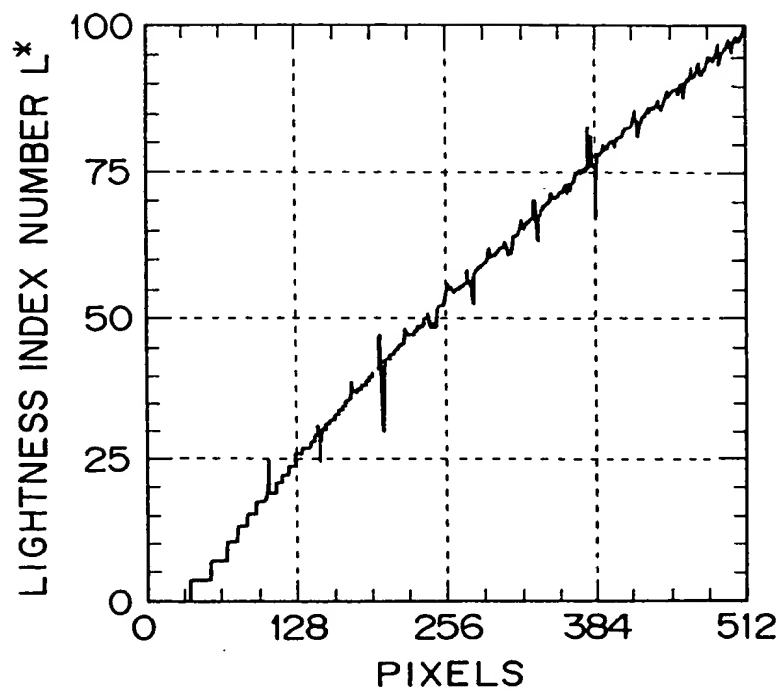
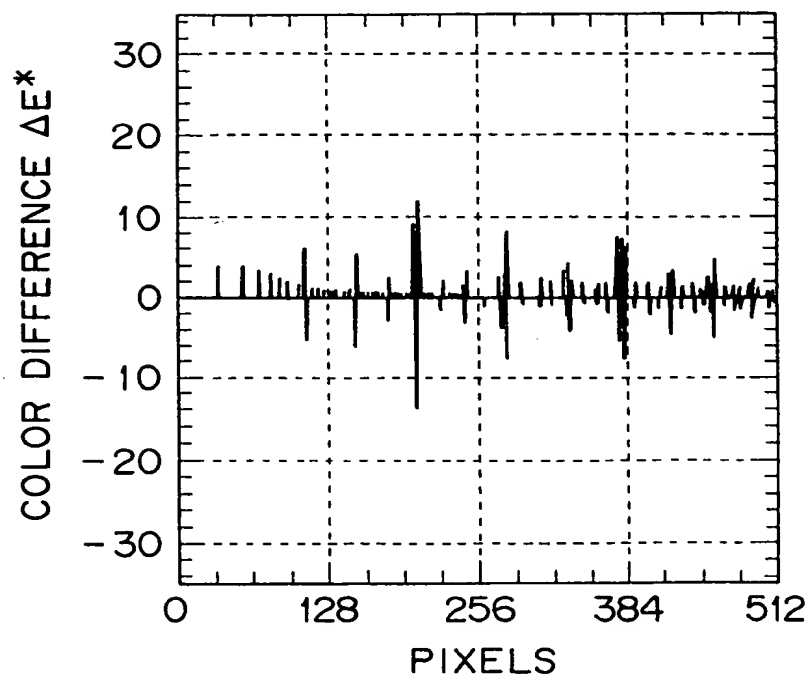


FIG. 29B



# FIG. 30A

DIVISION		WEIGHT		DIVISION	$\mu\text{sec}$
NUMBER	AFTER	NUMBER	BEFORE		
MSB	128	4	32	8320	2080
B7	64	3	21.33	4160	1387
B6	32	3	10.67	2080	693
B5	16	3	5.33	1040	347
B4	8	2	4	520	260
B3	4	2	2	260	130
B2	2	2	1	130	65
B1	1	1	1	65	65
Blank				92	
TOTAL				16667	$\mu\text{sec}$

# FIG. 30B

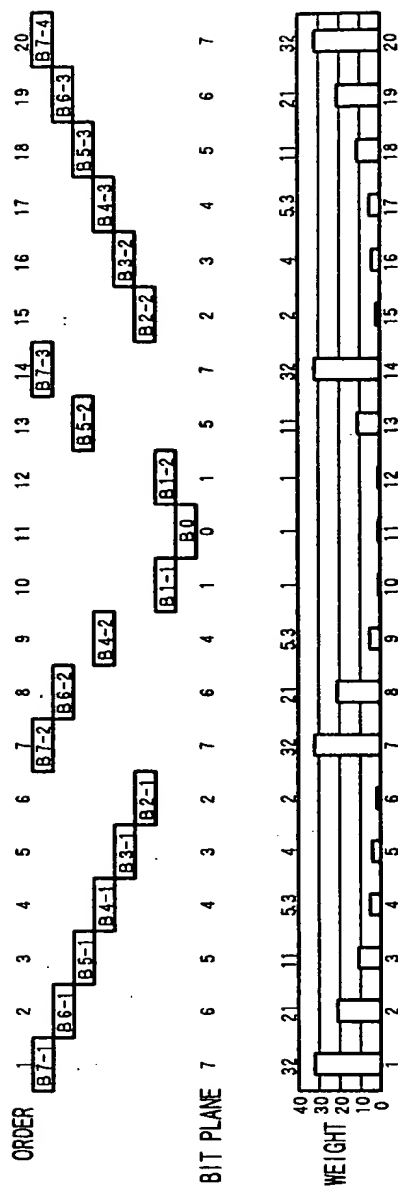


FIG. 31A

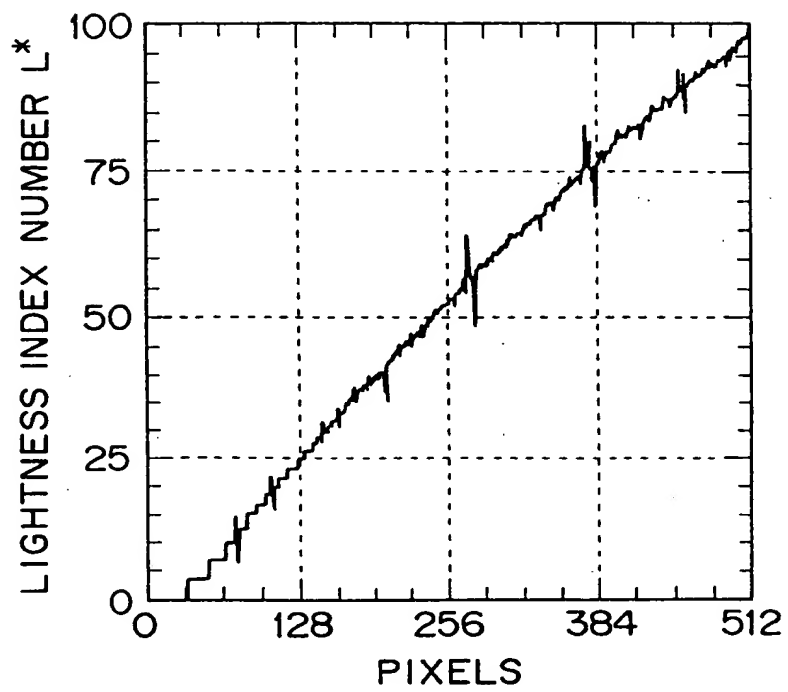


FIG. 31B

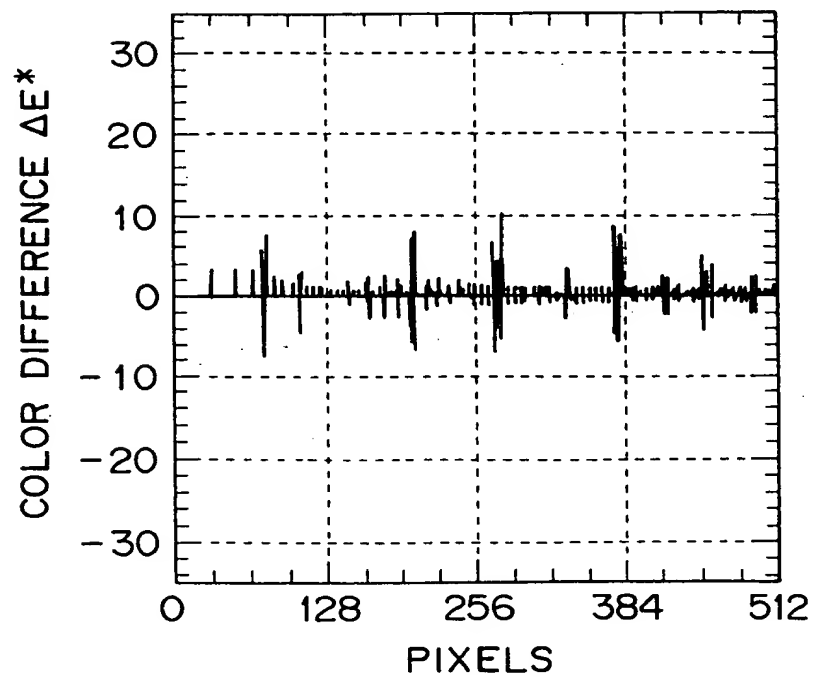


FIG. 32B

The diagram illustrates the bit planes of a 32-bit word. The top part is a staircase diagram where each step represents a bit plane (B0 to B7) and its corresponding bit positions (0 to 31). The bottom part is a bar chart showing the weight of each bit plane, with B0 having the highest weight (32) and B7 having the lowest weight (1).

Bit Plane	Bit Positions	Weight
B0	0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31	32
B1	1, 3, 5, 7, 9, 11, 13, 15, 17, 19, 21, 23, 25, 27, 29, 31	16
B2	2, 6, 10, 14, 18, 22, 26, 30	8
B3	3, 7, 11, 15, 19, 23, 27	4
B4	4, 8, 12, 16, 20, 24, 28	2
B5	5, 9, 13, 17, 21, 25, 29	1
B6	6, 10, 14, 18, 22, 26, 30	0.5
B7	7, 11, 15, 19, 23, 27, 31	0.25



FIG. 33A

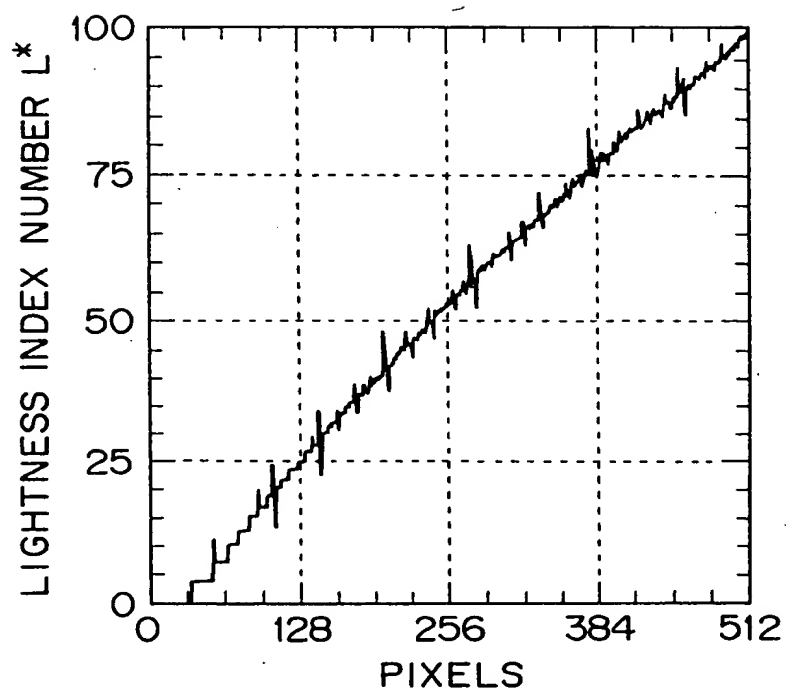
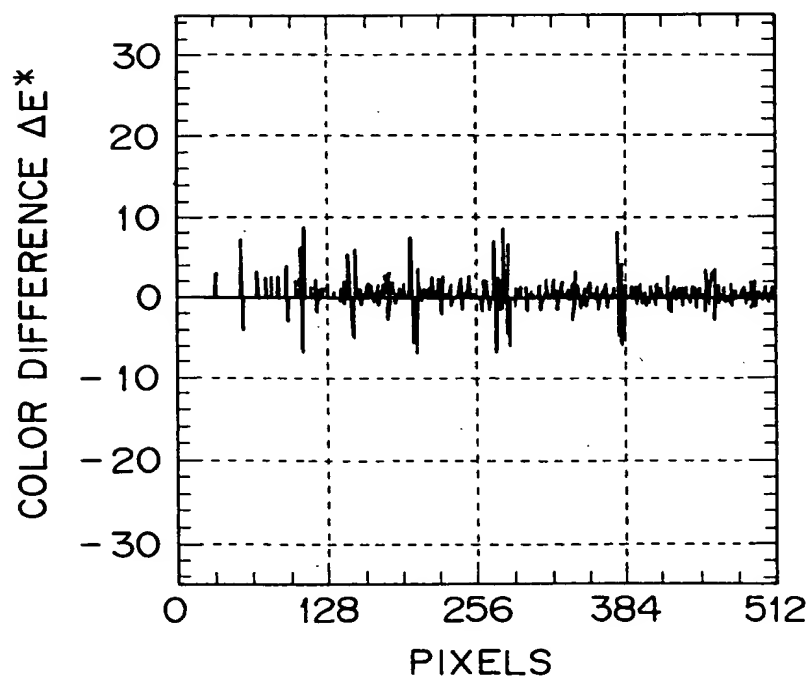


FIG. 33B



# FIG. 34A

BIT PLANE	DIVISION NUMBER		WEIGHT AFTER DIVISION
	WEIGHT		
MSB			
B7	128	4	32
B6	64	3	21.33
B5	32	3	10.67
B4	16	3	5.33
B3	8	2	4
B2	4	2	2
B1	2	2	1
LSB	1	1	1
Blank			
TOTAL			20

# FIG. 34B

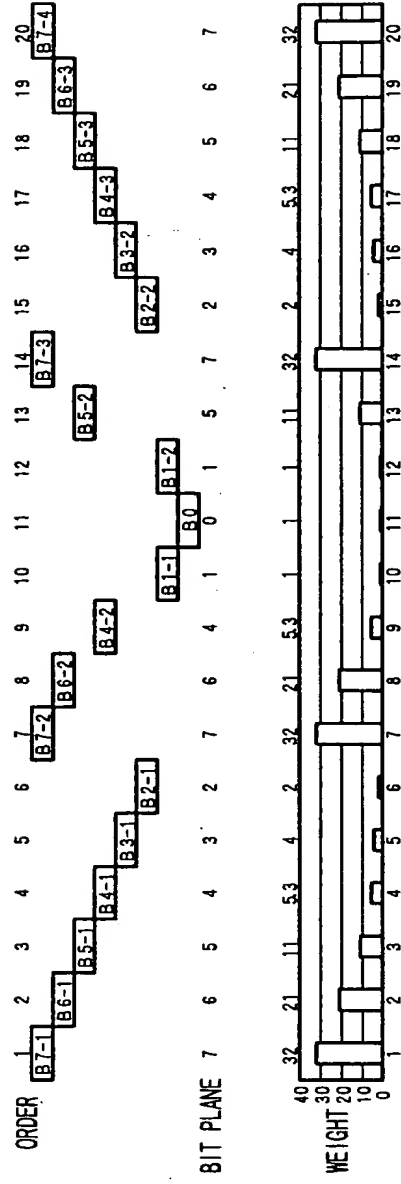


FIG. 35A

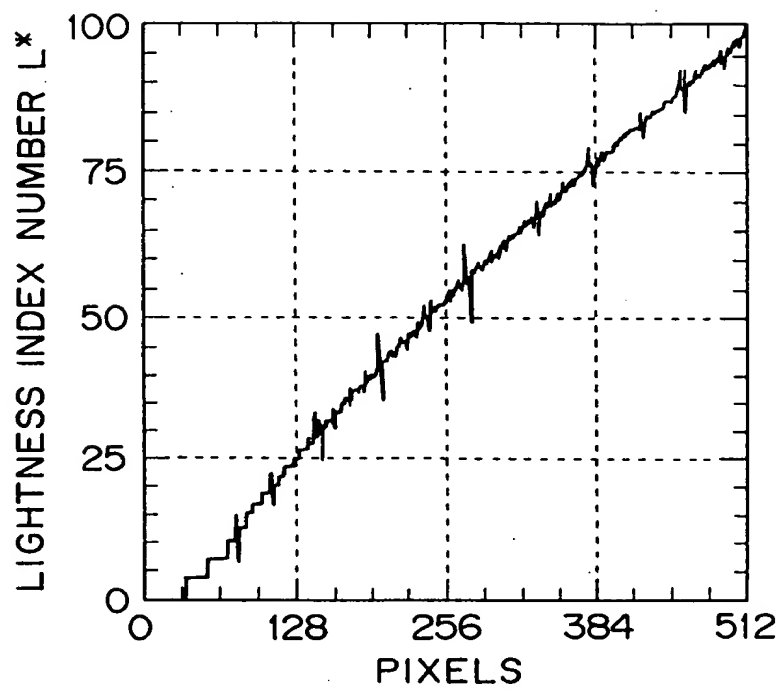


FIG. 35B

